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LUMINARY Memo #80

To:       Distribution
From:    D. Eyles
Date:     24 April 1969
Subject: Abnormal Exit from Landing Ignition Algorithm

Grossly bad initial conditions can cause the landing igntion algorithm to terminate abnormally.   Recognition of this innocuous phenomenon is simple:  if the flashing V06N61 which should appear after the ignition algorithm (the first P63 display) does not appear, and instead V06N63 is seen, it has happened.   The display is non-flashing and unchanging, and in fact P63 is dead, although 63 remains in the mode lights.

This phenomenon has frequently been observed on NASA and Grumman simulators.

Since the guidance phase-switching logic is within the guidance loop called as a subroutine by the ignition algorithm, initial conditions which cause the time-to-go calculator to arrive at an answer which satisfies the switching criterion (TENDBRAK or TENDAPPR) - that is a positive or small negative value - result in phase indicating indices being advanced. This makes the guidance equations exit using a path appropriate to the powered part of the phase:  the strange display is posted, then TCF ENDOFJOB.   The throttle and FINDCDUW are not called because STEERSW has not been set.

Recoverly is the same as for the POODOO 1406 alarm:  correct the initial conditions if you can and reselect the program.